Work experiences among healthcare professionals in the beginning of their professional careers

A gender perspective

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To my family
ABSTRACT

Swedish healthcare organizations have undergone substantial organizational and economic restructuring during the 1990s due to financial cutbacks. Little is known about recently graduated healthcare professionals’ work experience in healthcare and their future career preferences. The overall aims of this thesis was, to increase knowledge about how recently graduated healthcare professionals in Sweden perceive their work in healthcare organizations. A gender perspective is adopted.

In this national cross-sectional study, four stratified random samples were separately drawn from the 1999 Swedish university graduates who were nurses (NS), occupational therapists (OT), physical therapists (PT) and (registered) physicians (PN) and who at the time of the sampling procedure were living in Sweden. Stratification was performed by sex. A total of 3989 were eligible and of those, 1434 were selected: 535 NS, 250 OT, 250 PT and 399 PN.

A questionnaire was constructed containing questions about socio-demographic factors, working conditions, career preferences, work satisfaction and questions about the responsibility for and actual work with home and family, the so called unpaid household work. The questionnaires also contained questions measuring psychosocial working conditions: the effort-reward imbalance questionnaire (ERI-Q) and the demand-control questionnaire (DCQ). Collection of the data for NS, OT and PT was completed in March 2002 and for PN in May 2003. The response rate was 81% and 76% respectively. The total sample thus consists of 1145 participants; 423 nurses, 212 occupational therapists, 205 physiotherapists and 305 physicians.

Most of the respondents were employed in the public sector, but many desired private employment within the coming five year period, men more often than women. Career preferences for future work differed between women and men. A majority indicated that they did not have the opportunity to pursue knowledge development in the professional field during working hours and nearly one half could not work as independently as they wished. Satisfaction with work in general was high, but many were dissatisfied with management at work and a majority was dissatisfied with the work organization. This dissatisfaction was associated with the opportunity to work as independently as they wished and the opportunity to pursue knowledge development in the professional field. Significantly more women than men had the main responsibility for home and family and did most of the unpaid household work.

Among the OT and PT working for county councils and municipalities, the results revealed that those working for municipalities, experienced
low control at work compared with those working for county councils. No

differences were found between OT and PT or between men and women

in the two professions regarding the DCQ and the ERI-Q except for the

WOC scale. Women had significantly higher scores on the WOC scale

compared with men. Logistic regression analyses revealed a significant

association between WOC and ERI, effort, reward and sex. One fourth of

the OT and PT working for county councils and municipalities was
dissatisfied with their job and this dissatisfaction was significantly

associated with type of employer, reward and effort-reward imbalance (in

the ERI-Q) and control (in the DCQ).

Differences regarding scoring on the ERI-Q were found between nurses

and physicians working in county councils but not between women and

men in the same group, with the exception of the scores on

overcommitment. Significantly more nurses were defined as having high

effort, low reward and effort-reward imbalance compared with the

physicians. More women in the NS and PN group were defined as

experiencing WOC compared to men. Logistic regression analyses

revealed significant associations between experiences of WOC and ERI,

effort and reward. Nearly one fifth in the NS and PN group were
dissatisfied with work and this dissatisfaction was particularly high

among those with high effort, low reward, those with the greatest

imbalance between effort and reward and those who experienced high

overcommitment.

In conclusion, in order to limit future work related problems and to be

able to retain well educated professionals in healthcare work,
dissatisfaction among the recently graduated must be taken seriously.
Healthcare employers should better utilize the knowledge that recently

graduated possess, regarding for example how to be a part of the

development of the profession and the job. It is also important that

healthcare employers address gender (in) equality at work and that work

environments allow both women and men to combine careers with family
duties.

Keywords: healthcare, work satisfaction, career, gender equality, health

science education, recently graduated, novices, nurses, occupational

therapists, physiotherapists, physicians, ERI-Q, effort, reward, effort-

reward imbalance, overcommitment, DCQ, demand, control, job strain.
SVENSK SAMMANFATTNING


Ett frågeformulär konstruerades som innehöll frågor om sociodemografiska faktorer, arbetsförhållanden, karriärval, arbetstillförsel och frågor om ansvar för hemarbete och familj, dvs. obetalta arbete. Två allmänt använda frågeformulär i arbetsmiljösammanhang avseende upplevd psykosocial arbetsmiljö, inkluderades också i enkäten; ansträngning-belöning (Effort-Reward Imbalance Questionnaire, ERI-Q) och krav-kontroll (Demand-Control Questionnaire, DCQ). Datainsamling för sjuksköterskor, arbetsterapeuter och sjukgymnaster gjordes i mars 2002 och för läkare i maj 2003. Svarsfrekvensen för de båda samplen var 81 respektive 76 %. Totalt kom således 1145 personer att ingå i studien, varav 423 sjuksköterskor, 212 arbetsterapeuter, 205 sjukgymnaster och 305 läkare.

De flesta var anställda i den offentliga vården, men många ville hellre arbeta i den privata vården och män önskade detta mer än kvinnorna. Önskemålen om framtidssättningar inhämtade sig också åt mellan män och kvinnor. En majoritet uppgav att de inte hade möjlighet till ämnesfördjupning och kunskapsutveckling inom sitt yrkesområde under arbetet och ungefär hälften kunde inte arbeta så självständigt som de ville. Arbetstillförsel och karriärvalen var i allmänhet hög, men många var missnöjda med arbetstid och unga hade inte även erfarenhet att arbeta självständigt och möjligheterna till professionell kunskapsutveckling. Signifikant fler kvinnor än män hade ansvar för hem och familj och utförde det mest av det obetalet arbete i hemmet.
Bland de arbetsterapeuter och sjukgymnaster som arbetade inom kommuner och landsting, var det fler anställda inom kommunerna som upplevde låg kontroll i arbetet, jämfört med dem som arbetade i landstingen. Inga skillnader förelåg mellan arbetsterapeuter och sjukgymnaster eller mellan kvinnor och män avseende ansträngning-belösning eller krav-kontroll. Kvinnor skattade signifikant högre när det gäller work related overcommitment (WOC), ett särskilt coping-beteende som kännetecknas av svårigheter att koppla av från arbetet. Logistisk regressionsanalys visade på ett statistiskt signifikant samband med WOC och kön samt mellan WOC och ERI (obalans mellan ansträngning och belösning). En fjärdedel av arbetsterapeuterna och sjukgymnasterna i kommuner och landsting var missnöjda med sin arbetssituation och detta missnöje hade ett statistiskt signifikant samband med vilken typ av arbetsgivare man hade, om man upplevde låg belösning i arbetet samt en obalans mellan ansträngning och belösning. Missnöjet var också kopplat till upplevelser av låg kontroll.

Skillnader i ERI förelåg mellan landstingsanställda sjuksköterskor och läkare, men inte mellan kvinnor och män, förutom när det gäller WOC. Signifikant fler sjuksköterskor än läkare befanns ha hög ansträngning, låg belösning och obalans mellan ansträngning och belösning. Bland både sjuksköterskor och läkare upplevde kvinnorna i större utsträckning WOC. Logistiska regressionsanalyser visade på signifikanta samband mellan WOC och kön samt mellan WOC och ERI. Cirka en femtedel av sjuksköterskor och läkare var missnöjda med arbetssituationen och detta missnöje var särskilt högt bland dem som också upplevde hög ansträngning och låg belösning. Missnöjet var också kopplat till dem som upplevde den största obalansen mellan ansträngning och belösning samt bland dem som skattade högst på WOC.

Sammanfattningsvis måste missnöjet bland nyutbildade i vården tas på största allvar för att begränsa arbetsrelaterade problem i framtiden och för att behålla välutbildad arbetskraft inom den svenska sjukvården. Hälso- och sjukvårdens arbetsgivare borde dra större nytta av den kompetens som dessa självständiga yrkesutövare har med sig och bättre nyttja den kunskap de besitter. Detta skulle avsevärt bidra till att utveckla vården men även till den professionella utvecklingen. Det är också viktigt att arbetsgivare främjar jämställdhet mellan könen i arbetet så att arbetsmiljön och arbetssituationen gör det möjligt för både kvinnor och män att kombinera arbete med familjeliv.
ABBREVIATIONS

NS  Nurses
OT  Occupational therapists
PT  Physiotherapists
PN  Physicians
Q1  Questionnaire to NS, OT and PT
Q2  Questionnaire to PN
ERI  Effort-reward imbalance
ERI-Q  Effort-reward questionnaire
WOC  Work-related overcommitment
DCQ  Demand-control questionnaire
JS  Job strain
S1  Study group 1; respondents OT, PT and NS
S2  Study group 2; respondents PN
S3  Study group 3; OT and PT working in county councils and municipalities
S4  Study group 4; NS and PN working in county councils
This thesis is based on the following papers:


II Enberg B, Stenlund H, Öhman A. Gendered career preferences, work satisfaction and unpaid household work among recently graduated physicians. In manuscript.

III Enberg B, Nordin C, Öhman A. Work experiences of novice occupational therapists and physiotherapists in public sector employment – analyses using two occupational stress models. Accepted for publication in Advances in Physiotherapy.

IV Enberg B, Sundelin G, Öhman A. Work experiences among nurses and physicians working in county councils in the beginning of their professional careers – analyses using the effort-reward imbalance model. In manuscript.

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INTRODUCTION

The healthcare workforce in Sweden is ageing, and within a decade, a shortage of personnel is predicted (1, 2). Despite the fact that results on working conditions among Swedish healthcare workers have been published in recent years (3-7), little is known about recently graduated healthcare professionals’ work experience in healthcare and their future career preferences. The questions raised in this thesis, emanate from a previous research project on professional development and career choice in physiotherapy (8). Results from that study demonstrated a need for future research about recently graduated healthcare professionals’ view on healthcare work. It also highlighted gender to be used as an analytical tool in such studies.

This thesis deals with aspects of work experiences, work satisfaction and career preferences among recently graduated nurses, occupational therapists, physiotherapists and physicians in. It also scrutinizes paid work and unpaid household work in terms of responsibilities and work load. The thesis has a gender perspective.

Theoretical development of four healthcare professions

Nursing, occupational therapy and physiotherapy have different professional histories, but they have a similar history regarding the theoretical and academic development of the professions from the 1970s and onwards. The three professional educations were mainly praxis-oriented until the 1970s. According to Öhman (8), there were several possible reasons for the slow theoretical and academic development in physiotherapy. One was the subordinated position in healthcare organization in relation to physicians. Another reason was difficulties to establish research and to educate physiotherapy students independently (8). This reasoning can also be applied to nurses and occupational therapists. In 1977, the three educations were included in the system of higher education in Sweden. This enabled nurses, occupational therapists and physiotherapists to conduct research and reach a doctoral degree. During the 1990s the educations became disciplines at Swedish universities and faculty in caring science, occupational therapy and physiotherapy are now running under-, and postgraduate educations. This academization process has led to an increased professional autonomy and independence from the previously dominating medical profession (9). During the last three decades, a rapid professional and academic development of the three professions has occurred, and today a
great number of nurses, occupational therapists and physiotherapists have completed a doctoral degree. Today students at the three educational programs are taught to engage in professional knowledge development through generic academic skills such as critical appraisal of recent research literature in their professional field and evaluation of their own practice. They are trained in academic writing and they have to write scientific papers during their undergraduate education.

The state has historically been the responsible authority for the training of physicians at Swedish universities. Physicians have for a long time had formal possibilities to be engaged in research within the frame of their clinical work and being able to reach a doctoral degree and become professors. In line with the rapid development within medicine, the subject fields within medicine, in which research can be pursued, have increased. In spite of this, it is not until the late 1990s that medical undergraduate students in Sweden are obligated to write a scientific paper during their undergraduate education.

**Gender theory**

The gender analyzes and discussion in this thesis, are based on gender theory inspired by social constructivism. Gender is something that people do and create and not something they are (10). Gender is an active and continuous process, something we all create in interaction with each other and therefore it is produced and reproduced in different ways in different social and cultural contexts. It also influences human behavior (11). In this theoretical frame, all societies are seen to be constructed along gender structures and gender orders (12). Activities and relations between humans are based on the division of privileges and burdens between women and men (13). The gender structure keeps women and men apart, and is valid for women’s and men’s characteristics, behavior and work. In this structure, men has a superior position and women are subordinated (12, 14).

Gender can be studied with different perspectives and on different levels; on individual as well as group level. Gender can also be used to scrutinize structures on societal level. In health and caring sciences and in medicine, a gender perspective can be central when for instance studying how women and men are encountered and treated in the healthcare system but also as in this thesis, in research on women and men in healthcare work.
Introduction

Working life today and work in health care

Working conditions in Western societies have undergone considerable changes over the last decades. The rapid technical and scientific development in many different areas and the extending demands on increased efficiency and profitability have contributed to changes in work organizations and working conditions. The psychosocial work demands have increased and changes in how work is organized have effect on health at work and well-being (15). The association between downsizing and poor health has been confirmed by several authors (5, 16-18). Signs of more stressful psychosocial work environments are seen with higher demands and time pressure (19). Organizational changes and problems in different parts of working life are not the same (20). Härenstam et al. (21), found that more negative consequences due to organizational changes were perceived in the public sector, as compared to the private sector. Several authors have discussed stress, burnout (22, 23) and work satisfaction (3, 5, 24) in healthcare work. Despite this, many authors have found that a majority of those working in healthcare professions seem to be satisfied with their career choice and their profession as a whole (24, 25). In contrast, others report that well educated healthcare professionals, consider quitting their jobs (26-28). Due to the organizational and economic restructuring in Swedish healthcare organization during the 1990s, the number of employees was reduced by at least 60 000 (29). Market-oriented models were introduced to improve quality and service effectiveness (30). Work demands increased and influence over work decreased (4, 31). Increased workload and stress among employees in the Swedish welfare service sector was reported (32).

Gender in healthcare organization and healthcare work

In Swedish county councils, approximately 81 percent among the full-, and part time employed are women and women are also in majority in healthcare given by the municipalities (33). Thus, the three women professions nursing, occupational therapy and physiotherapy are traditionally gender-coded professions with a great majority of women. The percentage of men working as registered nurses, occupational therapists and physiotherapists in Sweden in 2006, was 10%, 4% and 20% respectively (34). A slow increase of men is noted in the three educational programs and the percentage of men, who graduated in 2006/7, was 14% among the nurses, 7% among the occupational therapists and 23% among the physiotherapists. The work force in the
medical profession is still dominated by men. In 2006, 59% of the registered working physicians were men. However, in recent years there has been a considerable increase of women in the medical programs in Sweden. Sixty-one percent of those who graduated as physicians in 2006/7 were women. According to Nordgren (35), the medical profession is undergoing a feminization process. Feminization and masculinization of professions are processes where the gender code in a profession is in change. This can be seen in women professions when an increasing number of men enter. After some considerable time, men are then often in majority and vice versa (36). In the physiotherapy and nurse professions, masculinization processes may now have started as increasing numbers of men enter the professions. With the change of the distribution of women and men in these professions, the gender coding of healthcare work in general may also alter.

Healthcare organization in the public sector is usually described as hierarchical, with a top-down structure. In this power structure, nursing aids and un-skilled workers have little power. Nurses, occupational therapists and physiotherapists are considered to be in a more independent situation and physicians have an even more superior position and exercise more power. The organization is gendered, male characteristics are normative and women are subordinated although the majority of employees are women (37). There is a hierarchical order not only between professions, but also within a specific profession (33). As healthcare work is described as gender coded, specific work tasks are coded to be either male or female (38-40). The gender coding also implies less status and payment for the work tasks that are considered to be female (12). This has historical roots and deals with the overall gender orders and regimes in the institutions as well as with the overall societal gender structure. Female dominated professions such as nurses, physiotherapists and occupational therapists have been subordinated in relation to the male dominated medical profession. The gender division of labor in a profession can be both horizontal and vertical. Horizontal gender division of labor relates to a segregation of women and men where men tend to do certain kinds of jobs, and women other kinds. Sweden has a high level of gender segregation at work (41). Due to the full-employment politics and the social policies, many work opportunities for women have been shaped in the public sector (42). In the vertical segregation, man and women have different jobs and positions in terms of status and power. In such a gender structure, men have usually jobs with higher status and have higher incomes compared with women (43).
Paid work and unpaid household work

Although gender research in health sciences is expanding, gender is often neglected in analyses of work satisfaction and career preferences among health care professionals. In gender analyses of working conditions and work satisfaction it is crucial to also include unpaid household work. Regarding this, two main theoretical postulates can be described: the stress theory (44) and the expansion theory (45). The stress theory assumes that multiple roles; the role as employed, as parent, as wife/husband can be stressful (44). Results from various studies support this theory. Lundberg and Frankenhauser (46) investigated psychological and physiological stress responses in a group of women and men in high-ranking positions. Although both men and women found themselves to have a stimulating job, data indicated a more favorable situation for men compared to women. The women were found to be more exposed to stress by their greater responsibility for home and family and greater unpaid workload. According to McDonald, Phipps and Lethbridge (47), demands of paid work, unpaid household work and overall life stress are associated with greater health problems. In a large study of Swedish individuals, Nordenmark found that multiple demands increased the risk of suffering from fatigue, among both women and men, but only the women desired reduced working time (48). Lundberg (49) states that psychological stress responses consistently indicate higher stress levels among full-time working women than men and there is a greater spill-over of stress between work and family life for women than for men. The higher work stress levels for women have also been associated with their responsibility for home and family (49). Organizational settings that take into account both paid and unpaid work, seem to result in higher well-being among the employees (50). The hypothesis in the expansion theory, is that having many roles can compensate stress in one area with positive circumstances in other areas and that this have a positive effect on health (45). In a review of Barnett (51), the results point out that several roles may lead to health problems, but it is assumed to be even more severe to have too few roles. Simon (52) argues, that as work and family roles constitute different meanings for women and men, it is more favorable for men, than for women to have multiple roles.

Psychosocial working conditions measured by two job stress models

Two job stress models often used in psychosocial stress research are the demand-control model (DCM) and the effort-reward imbalance model (ERI) (53, 54). The models were first used in research on cardiovascular health problems, but the models have lately been used in research on
various other health outcomes (53, 55-61). de Junge et al. found that the effect of both models on employers’ well-being are not significantly different in women and men or in young and old people (53). Some authors suggest a combination of the models (60, 62), while others have found little support for combining them (63). In this thesis, the outcomes from ERI and DCM are studied in relation to work satisfaction. The outcomes from the scoring on ERI and DCM, was also compared between women and men, between different healthcare professions and to some extent even between having employments in county councils and municipalities.

The effort-reward imbalance model

The Effort-Reward Imbalance model (ERI), developed by Johannes Siegrist, has its origin in medical sociology. The model takes into account the work content as well as the work role in a social perspective and the coping pattern of the individual (64). The model focuses on reciprocity of exchange in occupational life (64, 65). The work role is seen as a link between the social opportunity structure and self-regulatory needs (64). There is an expectation that effort at work (quantitative load, qualitative load and increase in total load over time) will be rewarded in terms of money, esteem, and career opportunities, including job security. High effort at work has been defined as having two different sources; an extrinsic source, the demands of the job, and an intrinsic source, the motivations of the individual worker in a demanding situation. This intrinsic, cognitive-motivational pattern of coping can be measured using a separate scale. The hypothesis is that experience of “need for control”, implies that an individual has high expenditure in terms of energy mobilization and job involvement, even when there is little to gain (64). This phenomenon is also described as overcommitment, and it is likely to modify (i.e. increase) the effect on health in cases of effort-reward imbalance (66).

The ERI model has been used in many studies on healthcare workers. In a study on Chinese healthcare workers, Li et al. found an association between ERI and job dissatisfaction (67). Bakker et al. found burnout significantly associated with ERI among German nurses who also experienced high overcommitment (68). Recent reviews of the ERI model conclude that effort-reward imbalance has gained considerable support for many different health outcomes (57, 69). The role of overcommitment in relation to effort-reward imbalance is however not clearly demonstrated as results from different studies contradict each others (69, 70).
The demand-control model

The Demand-Control model is a situated-centered model, which focuses on task characteristics of the workplace and has been frequently used in psychosocial work environmental research. The way in which work is organized is seen to be the cause of work stress (71). The most commonly used Demand-Control model hypothesis predicts that the most adverse reactions in the form of psychological strain occur when the psychological demands are high and the worker's decision latitude (control) is low: so-called job strain. Psychological job demands, or work-load, are defined as psychological stressors present in the work environment (e.g. high pressure on time, fast working pace, difficult and mentally demanding work). Decision latitude (control) includes the worker’s ability to control their own activities and skills usage (71, 72). In the demand-control model, the demand dimension and the control dimension are combined into four types of jobs. Active jobs, are jobs where both the psychological demands and the decision latitude are high, are related to good stress or active behavior development (work motivation, learning and coping pattern development) (71, 73). Low-strain jobs, were the level of control is high and the level of demands is low, are seen as the healthiest jobs. High-strain jobs, with high level of demand and low level of control and passive jobs with a low level of both demand and control are both identified as risk jobs.

The demand-control model has often been used in research on psychosocial working conditions among healthcare personnel, especially on nurses (7, 74-76). Bourbonnais et al. found associations between job strain and sick leaves (76), psychological distress and emotional exhaustion (75).
AIMS OF THE THESIS

The overall aim of this thesis was to increase knowledge about how recently graduated healthcare professionals in Sweden experience their work in healthcare organizations. A gender perspective is adopted.

Specific aims

- To investigate career preferences, work satisfaction and gender division of labor in paid and unpaid work among recently graduated nurses, occupational therapists, physiotherapists and physicians. (*Paper I & II*).

- To scrutinize how recently graduated occupational therapists and physiotherapists, employed by the county councils and municipalities, assess their work environment by means of extrinsic effort, intrinsic effort (overcommitment), reward, demand and control. Further, the aim was to estimate associations between satisfaction with their work and outcomes of the job stress questionnaires ERI-Q and DCQ. (*Paper III*).

- To scrutinize how recently graduated nurses and physicians, employed by the county councils, assess their work environment by means of extrinsic effort, intrinsic effort (overcommitment) and reward. Further, the aim was to estimate associations between satisfaction with their work and outcomes of the job stress questionnaire ERI-Q. (*Paper IV*).
METHODS

Participants and data collection

Four stratified random samples were separately drawn from the 1999 Swedish university graduates who were 1/nurses, 2/occupational therapists, 3/physical therapists and 4/physicians. They were at the time for the sampling living in Sweden. Stratification was performed by sex. The proportion of man and women in the samples corresponds to the proportion of man and women at the educational programs of the three professions in Sweden in 1999.

The samples of nurses, occupational therapists and physiotherapists were drawn in January 2002. A total of 3338 were eligible and of those 3338, 1035 were selected: 535 nurses, 250 occupational therapists and 250 physiotherapists. A questionnaire was administrated in January 2002 and data collection was after two reminders, completed in March 2002. Response rate was 81% (Figure 1). The non-response analysis revealed only minor, non-significant differences between respondents and non respondents with respect to sex, age and civil status.
Figure 1. Population, sample and respondents for the nurses, occupational therapists and physiotherapists.
In March 2003, a sample of 399 physicians was drawn from the target population of the 651 who graduated in spring semester 1999 and at the time for the sampling also were registered physicians. A questionnaire was administrated in March 2003 and data collection was after two reminders completed in May 2003. Response rate was 76% (Figure 2). The non-response analysis revealed only minor, non-significant differences between respondents and non-respondents with respect to sex and civil status. Sampling, administration of the questionnaires and data entry was performed by Statistic Sweden in both surveys.

Figure 2. Population, sample and respondents for the physicians.

The total sample thus consists of 1434 participants; 535 nurses (NS), 250 occupational therapists (OT), 250 physiotherapists (PT) and 399 physicians (PN). The study base for Paper I is formed by all the responding nurses, occupational therapists and physiotherapists (S1). In Paper II, the study base is formed by all the responding physicians (S2). The occupational therapists and physiotherapists working in county councils and municipalities were selected to form the study base for Paper III (S3) and the nurses and physicians working in the county councils form the study base for Paper IV (S4) (Figure 3). The respondents who did not work in their profession at the time for the study were excluded from the study bases for Paper III and IV. The
reasons from not working were due to being on maternity leave, long-term sick leave, being on education or out of work for other reasons. Those who declared work in two or more employments or both worked and studied, and in addition reported a total working time of more than 100 percent were also excluded.

Figure 3. Samples, study groups and papers in thesis.
Questionnaire

A questionnaire (Q1) was constructed for the study of recently graduated nurses, occupational therapists and physiotherapists and one year later, an almost identical questionnaire (Q2) was constructed for the study of recently graduated physicians. Only a few changes were done from the original questionnaire in order to fit the physicians. The questionnaires contained questions about working conditions, career preferences and work satisfaction. They also covered socio-demographic factors such as sex, age, profession, civil status, children living in the household and questions about the responsibility for and actual work with home and family, the so called unpaid household work. The two questionnaires were both pilot tested for content validity. As a result of this, a few questions were re-worded to improve clarity. A majority of the questions were in the format of forced choice questions and only a few questions could be answered in an open-ended format.

Regarding current work areas and preferred areas for future work, the respondents could choose among twelve (S1) respective twenty-four (S2) healthcare areas. They were also allowed to insert additional areas if the given alternatives did not fit. Preferences for future work were ranked in first, second and third choice, but only the first choice is presented in the papers. Current employer and preferred employer within five years were assessed with six alternatives. In the analyses this alternatives were grouped into three and calculated in the categories: private sector healthcare, public sector healthcare and other employers. Respondents were asked to indicate working time as a percentage of full time work and working 90% or more was defined as full-time work in this study. General attitudes about work, the items used to estimate work satisfaction, opportunities for independent work and opportunities to follow knowledge development in the professional field, were assessed on a four point modified Likert scale. The scales were dichotomized into two groups, the answers “not at all” and “to some extent” were coded as “no” and the answers in a high degree” and “in a very high degree” were coded as “yes”. The questionnaires also contained questions representing two different questionnaires measuring psychosocial working conditions; the effort-reward imbalance questionnaire (ERI-Q) and the demand-control questionnaire (DCQ).

The effort-reward imbalance model

In Paper III and IV, extrinsic effort and reward (ERI) was measured by the original 17-item questionnaire developed by Siegrist (64) together with his 6-item questionnaire measuring work-related overcommitment (WOC). In the ERI questionnaire, the effort dimension can be measured
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by five or six items. In the five-item version a question measuring physical load is excluded as this has been found to be appropriate in studies on white collar jobs (66). In the present study, the five-item version was used. In the rating procedure, the items were answered in two steps. In the first step, subjects agree or disagree whether or not the items describe a typical experience of their work situation and in the second step the subjects are asked to evaluate to what extent they feel distressed by this experience. The coding was made in accordance with Siegrist et al. (66). The effort and the reward dimensions were computed to indices. The reward dimension has three subscales; esteem, job promotion and job security. These subscales were also computed to indices. To be able to statistically analyze the effort and reward dimensions separately, the indices were divided into quartiles. Those above the third quartile of the effort scale and those below the first quartile on the reward scale were considered to be exposed. The effort-reward imbalance was identified by computing a ratio between the score for the effort and the reward indices for each one of the respondents. The formula used was: e/(rxc), were “e” is the sum score of the effort scale, “r” is the sum score of the reward scale and “c” is a correlation factor for different numbers of items in the two scales. The correlation factor was 0.45. A ratio above 1.0 was defined as effort-reward imbalance (55, 65, 66, 77).

Work related overcommitment (WOC), was measured by six items. Each item had four response alternatives: “strongly disagree”, “disagree”, “agree”, “strongly agree” and the alternatives were scored from one to four. In accordance with Siegrist et al. (66), the scores were computed into an index. In line with many authors, the index in Paper III was then divided into tertiles in the analysis (53, 55, 65, 77). Respondents with scores above the upper tertile, were defined to experience high work related overcommitment. However, in line with Fahlén et al. (78), the WOC index in paper IV was divided into quartiles in the analysis. Thus, the respondents above the third quartile were considered to be exposed to WOC.

The demand-control model

In Paper III, the 11-item Swedish demand-control questionnaire (DCQ) (79) was used. In line with recommendations by Theorell et al (79, 80), the demand dimension was computed into an index including five items. The six items in the decision latitude (control) dimension were also computed to an index (four concerning skill discretion and two concerning authority over decision). The decision latitude dimensions skill discretion and authority over decision were also calculated separately. The demand and the decision latitude indices were divided into quartiles. The respondents with scores above the third quartile on
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the demand scale and those below the first quartile on the decision latitude scale were defined to have high demands respective low control at work. Job strain (high strain) was computed combining those with high demand and low control. The category Active job was computed combining those with high demand who also had high control (with scores above the third quartile on the decision latitude scale). As suggested by Nordin et al. (81), the material was also analysed treating the two dimensions separately.

Imputation of missing values

To be able to construct index sums of the dimensions effort, reward and overcommitment from the effort-reward questionnaire and the dimensions demand and decision latitude (control) from the demand-control questionnaire, every question must be answered. In line with suggestions from other authors (70, 82) and in order to minimize dropouts, one single missing value was replaced by the median of the other values in the dimension where the missing value was found.

Presentation of data

Results from the analyses of the self-constructed questions are presented in Paper I and II. The study group in Paper I (S1) consists of the responding nurses, occupational therapists and physiotherapists (840 respondents). In Paper II, the study group (S2) consists of all the responding physicians (305 respondents) (Figure 3).

Some results regarding the ability to pursue knowledge development in the field and to having the opportunity to work as independent as they wished in S1, are not presented in any of the papers, but are presented in this cover story.

In Paper III, the study group (S3) consists of the occupational therapists and physiotherapists working in county councils and municipalities (Figure 2). Results and analyses from the ERI-q and the DCQ are presented together with results from a few socio-demographic questions from the self-constructed questionnaire in order to describe the studied groups. To test possible associations between work satisfaction and the outcomes from the ERI-Q and the DCQ, one question on overall work satisfaction from the self-constructed questionnaire was used.

The study group in Paper IV consists of the nurses and physicians working in county councils (figure 3). Results and analyses from the REI-
Q are presented together with results from a few socio-demographic questions from the self-constructed questionnaire. To test possible associations between work satisfaction and the outcomes from the ERI-Q, one question on overall work satisfaction from the self-constructed questionnaire was used.

**Statistical analysis**

The statistical analyses were performed in SPSS© version 10.0 (Paper I), version 14.0 (Paper II and III), version 17.0 (Paper IV) (SPSS Inc., Chicago, IL, USA) and STATA version 8.2 (TX, USA) (Paper I). The P-values less than 0.05 were considered significant.

**Paper I and II**

When estimating proportions and means, sampling weights reflecting the sampling design were used. Differences between men and women according to working conditions, career preferences and unpaid household work were analysed by chi-square tests. In paper I, a variable labeled “heavy workload at home” was calculated with a summation score including two items: having young children in the household (<7 years) and doing most of the unpaid household work. Associations between dissatisfaction with work organization as well as management at work and independent factors were analysed in univariate and multivariate logistic regression analyses estimation odds ratios for dissatisfaction with 95% confidence intervals. The independent factors used in the analyses were: age, current employer, heavy workload at home (Paper I) opportunities to pursue knowledge development in the field and the ability to work as independently as they wished (Paper II). Results from the multivariate analysis are presented separately for women and men.

Regarding new results from S1 presented in the cover story, associations between dissatisfaction with work organization as well as management at work and independent factors were analysed in univariate and multivariate logistic regression analyses, estimation odds ratios for dissatisfaction with 95% confidence intervals. The independent factors used in the analyses were: opportunities to pursue knowledge development in the field and the ability to work as independently as they wished.
Methods

Paper III and IV

When describing the total sample and when comparing groups, medians and means with Chi-square and Monte Carlo analyses were used. In Paper III, the comparative analysis were calculated and presented by profession (OT and PT) and by employer. In Paper IV, the analysis were done and presented both by profession (NS and PN) and by sex. In Paper III, univariate and multivariate logistic regression analyses were applied to test associations between work satisfaction and sex, profession, sector of employment, effort, reward, effort-reward imbalance, demand, control and job strain. Associations between WOC and sex, profession, sector of employment, effort, reward and effort-reward imbalance were also analysed. Only the significant associations are presented. In Paper IV, univariate and multivariate logistic regression analyses were applied to test associations between WOC and sex, effort, reward and effort-reward imbalance and the analyses were calculated separately for nurses and physicians. Chi-square tests were used to analyze frequencies of work dissatisfaction in relation to different levels of effort, reward, ERI ratio and WOC. The analyses were done separately for woman and men and for nurses and physicians.

Ethical approval

The studies in the thesis have been approved by the Research Ethics Committee at the Medical Faculty, Umeå University. Subjects were given written information about the confidentiality of the respondents and that participation was optional.
RESULTS

Study group 1 and 2

Working conditions and career preferences

In S1 (NS, OT and PT) a majority were full-time employed (71%) and men worked full-time more often than women (84% and 69% respectively, \(p<0.05\)). Most (88%), had public employment, 11% were employed in the private sector and 2% had other employers. The PT were more often private employed (20%) in comparison with NS (9%) and OT (11%) \(p<0.001\). Private employment was seen as a viable future career option for 53% of the NS and OT and for 72% of the PT \(p<0.001\). Twenty-one percent of the women and 26% of the men had experiences of working with administration and management. Nearly one half could not work as independently as they wished (women 47%, men 46%) and more women (76%) compared to men (69%) reported that they did not have the opportunity to pursue knowledge development in the field during working hours \(p=0.002\).

Among the physicians in S2, 87% worked full-time, men more often than women (94% and 76% respectively, \(p<0.001\)). Ninety-two percent were public employed, but as much as 45% preferred private employment for work within five years – men in a higher degree than women (50% and 39% respectively, \(p=0.01\)). Among the women, 13% reported experience of work with administration and management compared with 20% among the men \(p=0.03\). Seventy-three percent among the physicians reported that they did not have the opportunity to pursue knowledge development in the field. More men (50%), compared to women (40%), indicated that they could not work as independently as they wished \(p=0.01\).

The majority of NS worked in acute care (86% of the men and 65% of the women) and acute care was the most popular area for future work. However, fewer of those who worked in acute care at the time of the study, indicated acute care as a first choice for future work (men 79% and women 36%). Few women and no man had indicated geriatrics and oncology as first choice for future work. None of the NS worked with health promotion, but 10% of the women and 2% of the men reported health promotion as first choice for work within five years.

Among the PT, 32% of the women and 53% of the men worked in primary care, but only 11% and 7% respectively indicated this area as first choice for future work. Geriatrics and acute care were not preferable areas for future work. The most popular areas for work within five years among the
PT women were health promotion and rehabilitation and among PT men sports medicine and occupational health. Since the men in the OT group were so few, they were excluded from the analysis regarding working areas. Forty-four percent of the OT women worked in geriatrics, but few (7%), indicated this area for future work. Rehabilitation was the most popular area for work within five years. Eleven percent indicated occupational health and 10% health promotion for future work despite the fact that none of the OT women worked in those areas at the time for the study.

A majority (75%) among the physicians were residents leading to a specialist competence. The most commonly preferred area for future work among the man physicians was surgery. Fifteen percent among the men and 7% among the women indicated this area as first choice for work within five years ($p=0.001$). Seven percent of the women and no men indicated obstetrics and gynecology as first choice for work within five years ($p<0.001$).

**Unpaid household work**

The share of married/cohabitant women in both S1 and S2 who had greater responsibility for home and family and also did most of the household work was greater compared with the share of married/cohabitant men. The difference was statistically significant ($p<0.001$). The difference between women and men was even greater if they had young children living in the household and also if they in addition worked full time ($p<0.001$) (Table 1).
Results

Table I. Differences among women and men regarding the main responsibility for home and family and doing most of the household work among respondents in study group 1 (nurse, occupational therapists and physiotherapists) and study group 2 (physicians).

<table>
<thead>
<tr>
<th></th>
<th>S1</th>
<th>S2</th>
<th>Chi square p</th>
<th>p</th>
<th></th>
<th>S1</th>
<th>S2</th>
<th>Chi square p</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main responsibility</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>For home and family</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Married/cohabitants</td>
<td>36</td>
<td>3</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
<td></td>
<td>17</td>
<td>4</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>-Married/cohabitants with young children</td>
<td>49</td>
<td>2</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
<td></td>
<td>22</td>
<td>2</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>-Married/cohabitants with young children also working full-time</td>
<td>53</td>
<td>3</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
<td></td>
<td>22</td>
<td>2</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td><strong>Doing most of the household work</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Married/cohabitants</td>
<td>50</td>
<td>3</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
<td></td>
<td>18</td>
<td>1</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>-Married/cohabitants with young children</td>
<td>67</td>
<td>0</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
<td></td>
<td>24</td>
<td>0</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>-Married/cohabitants with young children also working full-time</td>
<td>59</td>
<td>0</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
<td></td>
<td>22</td>
<td>0</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Work satisfaction

In S1, the satisfaction with work in general and career choice was high (77% and 74% respectively). Twenty-six percent were uncertain of, or thought their choice of profession was wrong and among them, a majority (79%) had considered leaving the profession for other careers. Among the physicians in S2, the satisfaction with work in general was 81%, with minor differences between men and women (80% and 83% respectively). Seventy-eight percent were satisfied with their career choice and 15% had thoughts about leaving the profession.

Among the respondents in S1, the overall dissatisfaction with management at work was 64%, men (66%) slightly more dissatisfied than women (63%). Seventy-two percent reported dissatisfaction with their work organization and men were slightly more dissatisfied than women (74% and 72% respectively). Multivariate logistic regression analysis revealed a significant association between satisfaction with work organization and the independent variables age, and type of employment among the women. Those in the youngest age group had higher odds of being dissatisfied compared with those in the oldest age group (OR= 2.08, 95% CI 1.12-3.86) and the public employed had higher odds of being dissatisfied than the private employed (OR= 2.40, 95% CI 1.28-4.49). Among both men and women, dissatisfaction with work...
organization was significantly associated with the ability to pursue knowledge development in the professional field and the ability to work as independently as they wished (Table 2). Dissatisfaction with management was significantly associated with the ability to pursue knowledge development in the professional field among both women and men and the ability to work as independently among the women (Table 3).

**Table 2.** Odds ratios and 95% confidence intervals from multivariate logistic regression analysis for the association between dissatisfaction with work organization and independent variables by sex among NS, OT and PT.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Women OR</th>
<th>CI (95 %)</th>
<th>Men OR</th>
<th>CI (95 %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can work independently</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cannot work independently</td>
<td>2.57</td>
<td>2.13 – 3.10</td>
<td>1.60</td>
<td>1.01 – 2.54</td>
</tr>
<tr>
<td>Can pursue knowledge development</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cannot pursue knowledge development</td>
<td>2.41</td>
<td>1.99 – 2.93</td>
<td>1.99</td>
<td>1.25 – 3.16</td>
</tr>
</tbody>
</table>

**Table 3.** Odds ratios and 95% confidence intervals from multivariate logistic regression analysis for the association between dissatisfaction with management at work and independent variables by sex among NS, OT and PT.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Women OR</th>
<th>CI (95 %)</th>
<th>Men OR</th>
<th>CI (95 %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can work independently</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cannot work independently</td>
<td>2.24</td>
<td>1.89 – 2.65</td>
<td>0.87</td>
<td>0.56 – 1.36</td>
</tr>
<tr>
<td>Can pursue knowledge development</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cannot pursue knowledge development</td>
<td>2.00</td>
<td>1.66 – 2.41</td>
<td>4.73</td>
<td>2.99 – 7.48</td>
</tr>
</tbody>
</table>

In the physician group, dissatisfaction with work organization was 74% with no differences between men and women. Fifty-three percent indicated that they were dissatisfied with management at work, men slightly more than women (57% and 50% respectively), but the difference was not statistically significant. When adjusted for age, type of employment and workload at home, multivariate logistic regression analysis revealed significant associations between satisfaction with work organization and the ability to pursue knowledge development in the professional field and the ability to work as independently as they wished.
among the men (Table 4). Multivariate logistic regression analysis also revealed significant associations between satisfaction with management at work and having the opportunity to work as independently as they wished among both women and men (Table 5).

Table 4. Odds ratios and 95 % confidence intervals from multivariate logistic regression analysis for the association between dissatisfaction with work organization and independent variables by sex among PN.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Women OR</th>
<th>CI (95 %)</th>
<th>Men OR</th>
<th>CI (95 %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can work independently</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Cannot work independently</td>
<td>1.18</td>
<td>0.70 – 2.00</td>
<td>2.37</td>
<td>1.41 – 3.99</td>
</tr>
<tr>
<td>Can pursue knowledge development</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Cannot pursue knowledge development</td>
<td>1.31</td>
<td>0.74 – 2.33</td>
<td>2.07</td>
<td>1.22 – 3.50</td>
</tr>
</tbody>
</table>

Table 5. Odds ratios and 95 % confidence intervals from multivariate logistic regression analysis for the association between dissatisfaction with management at work and independent variables by sex among PN.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Women OR</th>
<th>CI (95 %)</th>
<th>Men OR</th>
<th>CI (95 %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can work independently</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Cannot work independently</td>
<td>3.02</td>
<td>1.87 – 4.87</td>
<td>2.08</td>
<td>1.33 – 3.25</td>
</tr>
<tr>
<td>Can pursue knowledge development</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Cannot pursue knowledge development</td>
<td>1.68</td>
<td>0.97 – 2.88</td>
<td>1.43</td>
<td>0.88 – 2.33</td>
</tr>
</tbody>
</table>

Study group 3

The study group in S3, consists of 262 occupational therapists and physiotherapists working in county councils and municipalities (136 OT and 126 PT). Among the OT, 48% were employed by the municipalities and 52% by the county councils. Eighty-one percent among the PT were employed by the county councils and 19% by the municipalities.
Demand and control

Forty-four percent of those who were employed by a municipality, and 23% of those employed by a county council experienced low control at work (p=0.001). Twelve people (13%) among those working in a municipality and only five (3%) among those employed by a county council (p=0.001) were found to have Job Strain. No significant differences were found between the two professions or between men and women regarding the scores for the DCQ.

Extrinsic effort and reward

Effort-reward imbalance was found among 23 (9%) in the group. Regarding effort, extrinsic reward and ERI, no significant differences were found between women and men, between those working in a municipality and those employed by a county council or between the two professions. For means and standard deviations regarding the ERI scoring see Table 6.

Only 3 (1%), among those respondents who were exposed to job strain, experienced effort-reward imbalance.

Table 6. Means with standard deviations of the indices of the score scales from the Effort-Reward Imbalance Questionnaire (ERI-Q), by profession and sex among physiotherapists and occupational therapists working in county councils and municipalities and nurses and physicians working in county councils. N= 702.

<table>
<thead>
<tr>
<th>Index (and scale scores)</th>
<th>OT Women Mean (SD)</th>
<th>OT Men Mean (SD)</th>
<th>PT Women Mean (SD)</th>
<th>PT Men Mean (SD)</th>
<th>NS Women Mean (SD)</th>
<th>NS Men Mean (SD)</th>
<th>PN Women Mean (SD)</th>
<th>PN Men Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effort (5-25)</td>
<td>12.1 (3.64)</td>
<td>11.1 (3.38)</td>
<td>14.5 (4.13)</td>
<td>13.3 (4.00)</td>
<td>11.8 (3.55)</td>
<td>10.8 (3.46)</td>
<td>14.4 (3.92)</td>
<td>13.6 (4.28)</td>
</tr>
<tr>
<td>Esteem (5-25)</td>
<td>21.1 (3.61)</td>
<td>21.1 (3.62)</td>
<td>21.4 (3.70)</td>
<td>22.3 (3.23)</td>
<td>21.2 (3.61)</td>
<td>20.2 (3.33)</td>
<td>21.6 (3.49)</td>
<td>22.1 (3.46)</td>
</tr>
<tr>
<td>Job promotion (4-20)</td>
<td>13.4 (3.02)</td>
<td>12.6 (3.42)</td>
<td>13.6 (3.06)</td>
<td>13.2 (2.98)</td>
<td>14.2 (3.16)</td>
<td>12.0 (3.64)</td>
<td>15.0 (3.33)</td>
<td>15.6 (3.77)</td>
</tr>
<tr>
<td>Job security (2-10)</td>
<td>8.5 (2.18)</td>
<td>8.6 (2.25)</td>
<td>8.7 (1.72)</td>
<td>9.0 (1.64)</td>
<td>8.6 (2.21)</td>
<td>8.3 (2.24)</td>
<td>8.9 (1.62)</td>
<td>8.7 (1.78)</td>
</tr>
<tr>
<td>Reward (esteem, job promotion and job security (11-55)]</td>
<td>43.1 (6.61)</td>
<td>42.3 (6.85)</td>
<td>43.8 (6.56)</td>
<td>47.8 (6.11)</td>
<td>43.0 (6.53)</td>
<td>40.5 (7.75)</td>
<td>45.7 (6.49)</td>
<td>46.6 (6.88)</td>
</tr>
<tr>
<td>Overcommitment (6-24)</td>
<td>14.2 (4.07)</td>
<td>12.5 (4.15)</td>
<td>13.8 (4.71)</td>
<td>13.5 (4.18)</td>
<td>13.8 (4.12)</td>
<td>10.7 (3.62)</td>
<td>14.2 (4.56)</td>
<td>12.5 (3.94)</td>
</tr>
</tbody>
</table>
Results

Work related overcommitment (WOC)

Logistic regression analysis revealed a statistically significant association between WOC and sex, effort-reward imbalance, degree of effort and degree of reward. Those with ERI, those with high effort and those with low reward had higher odds of being overcommitted than those that did not experience ERI, scored lower on effort and scored higher on reward. Women had higher odds of being overcommitted than men (Table 7).

Table 7. Odds ratios and confidence intervals from significant univariate and multivariate logistic regression analyses, for the association between work-related overcommitment (WOC) and independent variables among occupational therapists and physiotherapists working in county councils and municipalities.

<table>
<thead>
<tr>
<th>Variable</th>
<th>(Number of observations)</th>
<th>Odds ratio</th>
<th>Confidence interval (95%)</th>
<th>Odds ratio</th>
<th>Confidence interval (95%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effort-Reward Imbalance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>(239)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>(23)</td>
<td>5.99</td>
<td>2.36-15.22</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>(32)</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>(230)</td>
<td>2.72</td>
<td>1.01-7.33</td>
<td>3.39</td>
<td>1.16-9.89</td>
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<tr>
<td>Effort:</td>
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<tr>
<td>Low</td>
<td>(210)</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>(52)</td>
<td>4.14</td>
<td>2.20-7.80</td>
<td>3.31</td>
<td>1.72-6.41</td>
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<td>Reward:</td>
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<tr>
<td>High</td>
<td>(185)</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>(77)</td>
<td>3.12</td>
<td>1.78-5.47</td>
<td>3.15</td>
<td>1.72-5.78</td>
</tr>
</tbody>
</table>

1) Not included in the multivariate logistic regression analysis

Work satisfaction

More than one fourth, 70 people in the group as a whole (27%) were not satisfied with their work. Logistic regression analysis revealed a statistically significant association between work satisfaction and effort-reward imbalance, type of employer, degree of reward (ERI –Q) and degree of control (DCQ). Those with ERI, low reward and low control had higher odds of being dissatisfied than those that did not experience ERI and those who scored higher on reward and control. The respondents working in municipalities had higher odds of being dissatisfied compared with those working in county councils (Table 8).
Table 8. Odds ratio and confidence intervals from significant univariate and multivariate logistic regression analyses, for the association between work dissatisfaction and independent variables among occupational therapists and physiotherapists working in county councils and municipalities.

<table>
<thead>
<tr>
<th>Variable</th>
<th>(Number of observations)</th>
<th>Univariate Odds ratio</th>
<th>Univariate Confidence interval (95%)</th>
<th>Multivariate Odds ratio</th>
<th>Multivariate Confidence interval (95%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effort-Reward Imbalance 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>(239)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>(23)</td>
<td>3.40</td>
<td>1.43-8.13</td>
<td>–</td>
<td>–</td>
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<tr>
<td>Employment:</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>County council</td>
<td>(173)</td>
<td>1</td>
<td>1.23-3.80</td>
<td>1.88</td>
<td>1.00-3.54</td>
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<tr>
<td>Municipality</td>
<td>(89)</td>
<td>2.17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reward:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>(185)</td>
<td>4.26</td>
<td>2.36-7.64</td>
<td>4.97</td>
<td>2.63-9.40</td>
</tr>
<tr>
<td>Low</td>
<td>(77)</td>
<td>4.00</td>
<td>2.24-7.16</td>
<td>4.03</td>
<td>2.13-7.63</td>
</tr>
<tr>
<td>Control:</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>(183)</td>
<td>1</td>
<td>1</td>
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<tr>
<td>Low</td>
<td>(79)</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1) Not included in the multivariate logistic regression analysis

Study group 4

S4, consists of 440 nurses and physicians working in county councils and municipalities (198 NS and 242PN). Eighty-seven percent among the NS and 48% among the PN were women.

Extrinsic effort and reward

High effort was found among 26% of the NS and 18% among the PN (p=0.047), while 41% of the NS and 16.5% of the PN experienced low reward (p<0.001). Twenty-one percent among the NS and 8% among the PN were defined to experience effort-reward imbalance (p<0.001). For means and standard deviations regarding the ERI scoring see Table 6.

WOC

Twenty-four percent among the NS and 19% among the PN were defined to have WOC. In the group as a whole, 26% of the woman and 12% of the men experienced WOC (p=0.001). In the nurse group, univariate logistic regression analysis revealed a significant association between WOC and ERI and WOC and effort. The respondents with ERI and high effort had higher odds of being overcommitted than those that did not experience ERI and those with lower effort (Table 9). Among the physicians, univariate logistic regression analysis revealed a significant association
between WOC and ERI, sex, effort and reward. Those who experienced ERI, those with high effort and those with low reward had higher odds of being overcommitted than those that did not experience ERI, those who scored lower on effort and those with higher reward. Women had higher odds of being overcommitted than men (Table 10).

Table 9. Odds ratios and confidence intervals from univariate and multivariate logistic regression analyses, for the association between work-related overcommitment (WOC) and independent variables among nurses.

<table>
<thead>
<tr>
<th>Variable</th>
<th>(Number of observations)</th>
<th>Odds ratio univariate</th>
<th>Confidence interval (95%)</th>
<th>Odds ratio multivariate</th>
<th>Confidence interval (95%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effort-Reward Imbalance 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>(156)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>(42)</td>
<td>5.50</td>
<td>2.63-11.50</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>(25)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>(173)</td>
<td>4.17</td>
<td>0.95-18.37</td>
<td>3.29</td>
<td>0.70-15.47</td>
</tr>
<tr>
<td>Effort</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>(147)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>(51)</td>
<td>6.75</td>
<td>3.29-13.84</td>
<td>6.33</td>
<td>2.95-13.60</td>
</tr>
<tr>
<td>Reward</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>(117)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>(81)</td>
<td>1.63</td>
<td>0.85-3.14</td>
<td>1.02</td>
<td>0.48-2.18</td>
</tr>
</tbody>
</table>

1) Not included in the multivariate logistic regression analysis

Table 10. Odds ratios and confidence intervals from significant univariate and multivariate logistic regression analyses, for the association between work-related overcommitment (WOC) and independent variables among physicians.

<table>
<thead>
<tr>
<th>Variable</th>
<th>(Number of observations)</th>
<th>Odds ratio univariate</th>
<th>Confidence interval (95%)</th>
<th>Odds ratio multivariate</th>
<th>Confidence interval (95%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effort-Reward Imbalance 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>(222)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>(20)</td>
<td>18.48</td>
<td>6.27-54.48</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>(125)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>(117)</td>
<td>2.35</td>
<td>1.20-4.59</td>
<td>4.51</td>
<td>1.92-10.62</td>
</tr>
<tr>
<td>Effort</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>(199)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>(43)</td>
<td>10.16</td>
<td>4.81-21.46</td>
<td>10.29</td>
<td>4.34-24.37</td>
</tr>
<tr>
<td>Reward</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>(202)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>(40)</td>
<td>5.08</td>
<td>2.43-10.65</td>
<td>3.96</td>
<td>1.61-9.72</td>
</tr>
</tbody>
</table>

1) Not included in the multivariate logistic regression analysis
Work satisfaction

Twenty-two percent of the NS and 16% of the PN were dissatisfied with their work (women 19%, men 17%). Chi-square tests were used to analyze frequencies of work dissatisfaction in different levels of effort, reward, ERI ratio, and WOC. Most dissatisfied were women, men, nurses and physicians in the groups with the highest scores on effort, the lowest scores on reward, those with the highest ERI ratio and those with the highest scores on WOC (Table 11).

Table 11. Percentage of dissatisfaction with work among women, men, nurses and physicians respectively with different levels of exposure to extrinsic effort, reward, effort/reward ratio and work related overcommitment.

<table>
<thead>
<tr>
<th></th>
<th>Group 1 (below q 1) (%)</th>
<th>Group 2 (above q 1) (%)</th>
<th>Group 3 (above q 2) (%)</th>
<th>Group 4 (above q 3) (%)</th>
<th>Chi sq</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Women</strong> (n=290)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effort</td>
<td>7.9</td>
<td>11.1</td>
<td>15.5</td>
<td>42.4</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>Reward</td>
<td>42.9</td>
<td>3.6</td>
<td>9.2</td>
<td>3.8</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>Effort/reward ratio</td>
<td>7.9</td>
<td>6.6</td>
<td>15.1</td>
<td>43.6</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>Overcommitment</td>
<td>2.7</td>
<td>7.9</td>
<td>24.4</td>
<td>38.2</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td><strong>Men</strong> (n=150)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effort</td>
<td>14.6</td>
<td>7.7</td>
<td>11.4</td>
<td>42.9</td>
<td>0.003</td>
<td></td>
</tr>
<tr>
<td>Reward</td>
<td>43.2</td>
<td>18.2</td>
<td>7.9</td>
<td>2.4</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>Effort/reward ratio</td>
<td>12.8</td>
<td>2.9</td>
<td>13.2</td>
<td>46.7</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>Overcommitment</td>
<td>8.5</td>
<td>11.5</td>
<td>30.3</td>
<td>33.3</td>
<td>0.013</td>
<td></td>
</tr>
<tr>
<td><strong>Nurses</strong> (n=198)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effort</td>
<td>12.0</td>
<td>7.3</td>
<td>21.4</td>
<td>47.1</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>Reward</td>
<td>39.5</td>
<td>10.6</td>
<td>10.0</td>
<td>5.0</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>Effort/reward ratio</td>
<td>8.9</td>
<td>8.3</td>
<td>10.2</td>
<td>45.6</td>
<td>&lt;0.001</td>
<td></td>
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<tr>
<td>Overcommitment</td>
<td>1.7</td>
<td>12.8</td>
<td>31.4</td>
<td>43.8</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td><strong>Physicians</strong> (n=242)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effort</td>
<td>11.4</td>
<td>12.3</td>
<td>9.4</td>
<td>37.2</td>
<td>0.002</td>
<td></td>
</tr>
<tr>
<td>Reward</td>
<td>50.0</td>
<td>19.2</td>
<td>8.0</td>
<td>2.7</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>Effort/reward ratio</td>
<td>10.8</td>
<td>4.0</td>
<td>17.7</td>
<td>42.5</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>Overcommitment</td>
<td>8.3</td>
<td>7.9</td>
<td>21.7</td>
<td>30.4</td>
<td>0.002</td>
<td></td>
</tr>
</tbody>
</table>
DISCUSSION

Career preferences

Both a horizontal and a vertical gender division of labor, was found among the “new generation” healthcare professionals in the present study. The gender division of labor among the recently graduated is in line with results in studies on the Swedish labor market in general and of healthcare professions in particular. Ylva Ulfsdotter Eriksson (43), has studied social status and gender among different occupations in Sweden. She states that employees in a specific occupation are allocated to different tasks along gender lines and in a vertical structure. These work tasks often corresponds to femininity and masculinity and follow the gender system of separation between man and women and the logic of masculinity as norm.

Nursing is a female gender-coded profession (39, 40, 83) and it becomes therefore important for men in nursing to choose niches that are perceived more masculine (40). Technology is strongly associated with masculinity (84). Men therefore tend to work in nursing specialties that are technically oriented. Very few men nurses in the present study worked in the caring and body-close areas such as geriatrics and oncology. These areas are traditionally coded as women’s work (40, 85). According to Abrahamsen (86), women also tend to leave the most body-close areas after some years in the profession, in favor of jobs with higher status. This reasoning is also in line with the wishes for future work among the women and men nurses in this thesis.

Studies on gender division of labor in physiotherapy are sparse, but some authors have presented results from Swedish studies. Stina Johansson (87) has described physiotherapist’s careers to be gendered. She found physiotherapy women to work in more somatic-related specialties compared to men. The same cohort of physiotherapists as in this thesis, were studied by Öhman et al. (88) in 1997 and 1999, when they still were students. From that study the authors conclude, that the students wished to work with healthy people, i.e. sports medicine and fitness centers. In the present study, the desire to work with healthy people seems to remain as sports medicine and occupational health were the most popular areas for future work among the men and health promotion among the women. One possible explanation for the popularity of sports medicine among the men physiotherapists is high status and masculine ideals that they probably find in this area. According to Connell (89), a masculine ideal focusing on masculinity, strength and toughness is often constructed in sports (1995). In contrast to nurses, few women and no men physiotherapists desired acute care as a future career. This might be
explained by the work tasks for physiotherapists in acute care that are probably not perceived as being in line with the core knowledge of physiotherapy and therefore not as attractive as for instance sports medicine.

As the occupational therapy men were so few, no comparison between women and men regarding actual and preferred healthcare facility could be done.

One of the most important things noted is that geriatrics is not an area for preferred future work among the recently graduated nurses, occupational therapists and physiotherapists. This is of concern, when considering the ageing population in Sweden. An increasing scarcity of health professionals will probably occur in the near future, especially in geriatric wards and those providing care for the elderly (1). There is a need for emergent efforts from health policy makers, as well as health care employers, to increase attraction to care of the elderly.

The gender differences concerning preferred specialties among men and women in the medical profession, has been described by several authors (90, 91). The same differences were prevalent also among the recently graduated physicians in this study. The differences in this group were however not as large as for the profession as a whole. Since most of the participants had not yet completed their specialist training it is difficult to predict their final career paths. Judging from their preferences it is most likely that they will reproduce the gendered patterns of the profession. These patterns were clearly shown in a Norwegian study; women were as likely as men to enter surgery, but did not complete surgical training as often as men (92). Einarsdottir (93), discusses three status hierarchies in the medical profession; first a distinction between diagnoses, curing and caring, second somatic issues are superior to the social and third the spatial localization of the work, i.e. the university clinic in centre and the primary care clinic in the periphery. In future research on physicians and other healthcare professionals, these ideas in combination with a gender analysis, are important in order to further understand internal cultures and professional hierarchies.

Leadership is described as strongly connected with masculinity (94), and there was a tendency for more men than women in all the four professions to have work experiences of management. Robertsson (95) describes men nurses’ advantage concerning the ability to receive higher positions. Also women nurses seem to support men to seek such positions. Studies on health care support the conclusion that the hierarchical system seems to be self-generating between women and men. Flexible and anti-authoritarian organizations are therefore needed in order to increase opportunities for women to develop at work and achieve leadership positions (37).
Psychosocial working conditions

The high scores on the work related overcommitment (WOC) may to some extent reflect the stress of being inexperienced in the work situation. On the other hand, as women scored significantly higher on WOC than men, most of these professionals are women in a hierarchical healthcare organization that subjects them to certain demands and expectations and therefore the difference between women and men may reflect existing gender inequalities. It may also reflect the fact that many women had the main responsibility and did most of the unpaid work in home and family, but this has to be further investigated. WOC was also found to be significantly associated with effort-reward imbalance (ERI). A significant association was also found between WOC and ERI. Some authors support the idea that experienced overcommitment, when exposed to ERI, increases the prevalence of burn-out (68) and the risk of poor well-being (53). Results presented by Fahlén (78), suggest that increased WOC may also represent an outcome of exposure to ERI and in that case, be a reaction to a stressful situation. The association between WOC and ERI found in the current study supports this suggestion.

In paper III, the study group consisted of occupational therapists and physiotherapists working in county councils and municipalities. Both the effort-reward imbalance questionnaire (ERI-Q) and the demand-control questionnaire were used on the one hand to study possible outcomes from the scoring in these instrument scales, but on the other hand also to enable a description of the psychosocial work environment in municipalities and county councils. The purpose of the indices in the DCQ was to compare different professions. The results suggest that type of healthcare sector is more important than type of profession. The reason for this could be that occupational therapists and physiotherapists are two rather similar professions, and a comparison between some other professions might have shown other results. The participants were recruited from the whole country and it is therefore unlikely that a few specific work sites with exceptional working-conditions would have confounded the results. According to Karasek, one finding observed in earlier studies regarding the DCQ, is that women have lower scale means for the subscales skill discretion and decision over authority, i.e. lower control, than men (71, 73). No significant differences between women and men were found regarding scores for any of the DCQ scales in the present study. Surprisingly, no differences in the scoring on extrinsic effort and reward between women and men, working in municipalities or county councils or between the two professions were found.

Nurses scored significantly higher on effort, lower on reward and more nurses experienced ERI compared with physicians. Status and power among the employees in an organization might have an impact on the experiences psychosocial work environment.
Overall work satisfaction was affected negatively by high scores on the ERI scale in all four professions. This can be an indication that the ERI model can be used to evaluate work satisfaction in healthcare. Li and colleagues also found all three scales (effort, reward and overcommitment) and the ERI ratio to be associated with an elevated odds ratio for job dissatisfaction among a group of Chinese healthcare workers (67). In the long run, it is a possibility that the associations with ERI and dissatisfaction might lead to an increase in illhealth or to intentions to leave the job. The association between ERI and increased illhealth has been found in several studies on healthcare personnel (96, 97). In a study on young nurses in Canada, Lavoie-Tremblay et al. (27) found an association between ERI and the intention to quit their positions.

**Dissatisfaction with work, management and work organization**

Workplace conditions effect job satisfaction and are essential for the well-being among healthcare personnel (50, 98, 99). Arnetz (31) emphasize that the quality of leadership is important for creating a good work environment. The associations between dissatisfaction and the inability to work independently found in the present study are supported by others who argue that clinical autonomy is important for job satisfaction (24, 100). Another possible explanation to the great dissatisfaction with work management and organization is the hierarchical structures in public healthcare. A majority of the respondents in this study were women born in the 1970s. An extensive national study of attitudes towards several aspects of life, among Swedish youth born in the 1970s revealed that this age group objects to hierarchical work environments. The women in the study were found to be less accepting to hierarchical work environments than men. The result from the youth study also demonstrated that more than half of the men and 40 percent of the women were not considering future work in the healthcare sector (101). Around one half of the respondents in all four professions in the current study, desired private employment for future work, which in turn might reflect ideas and perceptions that hierarchical structures do not exist to the same extent in the private sector. The dissatisfaction is of major concern, as the vast majority of healthcare belongs to the public sector. Another concern is the expected future imbalance between retirement and an available work force in the healthcare sector (1, 2).

The associations between dissatisfaction with work and outcomes of the ERI indices are supported by other authors. Results presented by de Jonge et al. (53), showed a significant increase in job dissatisfaction
Discussion

among overcommitted employees who experienced effort-reward imbalance, in comparison with non-overcommitted employees.

Besides the associations between dissatisfaction with work organization and management and the possibilities to pursue knowledge development and to work independently, found in this study, the reasons behind the dissatisfaction should be further investigated.

The mismatch between academic education and professional practice

Educators of healthcare professionals in Sweden have a mandate from the government to teach knowledge and skills that enable development of the professions and an evidence-based practice in healthcare. Results from the present study indicate that this view is not implemented in healthcare work to the extent that the participants wish. In a study on Swedish registered nurses’ perceptions on their work and professional development, Hallin and Danielsson (102) found that knowledge and skills received in the nurse education, such as work development and research, seldom were used in practice. University courses had stimulated the nurses to further develop such knowledge, but back in the clinic, nobody asked for evidence-based nursing. The dissatisfaction in association with few opportunities to pursue knowledge development found in the current study should be seen not just as a personal, but also as an organizational problem. A priority for healthcare employers should be to use employees’ skills for evaluation of methods, in order to create cost-effective and evidence-based healthcare. I argue that this should be a natural and important part of the work among those who have received such knowledge and skills during their academic education. According to organizational theory, modern organizations are based on independence, freedom of action, responsibility and self-development of the employees (94). Despite all organizational changes, the Swedish healthcare organizations might still adhere to older ways of working and might not have effective ways to introduce new organizational ideas. This could be one explanation of why the respondents in this study experienced that there skills and knowledge were not used.
Discussion

Gender and organization

It is a well-known fact that there are differences in society between women and men regarding work, working conditions and salary (41). Gender in organizations, is not only about the gender segregation in the workplaces but also how people perceive the segregation. Media has a great influence on strengthening the gender stereotypes in healthcare (103). As we all in interactions with each others shape and reshape gender structures, we all also have the possibility to change them. Social change is difficult to achieve and social structures are not so easily or quickly changed. Abrahamson (84) found however that qualities and characteristics in a work place that traditionally have a female connotation can change to male qualities and characteristics if needed and desired. This phenomena, is likely to occur when certain qualities and characteristics in the work situation at a sudden become more important than they used to be. The first step to be able to do something about the hierarchy and existing gender order in healthcare, is to acquire more knowledge about gender theory and how gender influences everyday life. Educators in health science programs have a responsibility to implement gender knowledge in the educational programs, not only regarding gender inequality in health, but also theories about gender in organizations and gender division of labor.

Paid- and unpaid work

Despite the fact that Sweden is number one in the world regarding gender equality, results from the current study revealed a statistically significant difference between women and men regarding the performance of household work. A majority among the physicians reported equal sharing of household work with their partner. This must be regarded as promising for the future development of gender equality in working conditions for physicians. The gender division of labor in unpaid work among the men and women physicians in the present study is more gender equal than among nurses, occupational therapists and physiotherapists, where the absolute majority of women devoted much more of their time to family duties than did the men. The difference in results between physicians and the other three professions, probably reflect patterns of marriage, attitudes to professionalism and social class factors. However, gendered patterns of division of labor regarding unpaid household work were also obvious among the physicians who did not share household duties equally. Thus, highly qualified, well educated, full-time working men and women seem to adhere to traditional divisions of labor regarding the unpaid work in the home. This will probably affect women’s total workload and probably their career opportunities. Worth
to note is that among all three professions, no married/cohabitant men with young children had the main responsibility for home and family or did most of the work in the household.

Many authors who have discussed work-family conflict have emphasized the problems that might affect both men and women. Chandola et al (104) found conflict between work and home to effect mental health negatively among both women and men. Nordenmark (48) found women but not men to reduce their working time to balance work and family demands. As mentioned in the introduction, psychological stress responses consistently show that full-time working women have higher work stress levels and a greater spill-over of stress between work and family life compared to men (49). The higher work stress levels of women have also been associated with their responsibility for home and family (49). Jakobsen (30), discusses life mode processes among employees in the public sector healthcare. Life mode, can be conceived as “a collective practice whereby people contribute in some way to society, as to gain access to necessary means of existence and to become fully human” (30) page 113. According to Jakobsen, modern women in general in Sweden often live a mixed life mode, both the worker and the housewife life mode. In relation to gender theory, it is an interesting field for future research, to find out how these well educated women see themselves in relation to this theory. Do they have a combined life mode and if so, how can the theories behind be explained?

Methodological considerations

The total sample size in this cross-sectional study probably is large enough in relation to the population. Statistics Sweden was responsible for the randomization process and for the distribution of the questionnaire. In paper I and II, sampling weights reflecting the sampling design were used. In paper III and IV, where the psychosocial stress questionnaires were used, sampling weights were not used. The self constructed questionnaire was tested for content validity, but some of the questions were probably not clear enough and the answers from these questions were not analyzed.

The ERI-Q and The DCQ are usually used in research on health outcomes. In this study they were used to explore a possible association with work satisfaction. The many different alternatives in how to estimate ERI and Job strain described in the literature, made it somewhat difficult to know in what way the results should be analysed. It is therefore important to try to describe how this has been done and I hope I have managed to do so. In paper III, tertiles were used to estimate WOC, whiles quartiles were used in paper IV. As the results from the two study
Discussion

groups regarding WOC can not be compared except for the means, this probably is not of any major concern.

The present study was done in times of an economic boom and perhaps the question on intentions of leaving the profession could have been answered differently if the study was conducted in times of recession.

Implications for future research

To deepen the understanding of the dissatisfaction with management at work and work organization found in the present study, a qualitative approach is needed.

In a gender perspective, the importance of hierarchical division between women and men in healthcare organization regarding influence and power is a field to be further explored.

Research on psychosocial working conditions among occupational therapists and physiotherapists are sparse. These female dominated professions deserve more interest from research in this area.
CONCLUSIONS

- A gender division of labor reflecting the existing gender structures in healthcare and in society were seen among the recently graduated healthcare professionals.

- A majority were public employed, but more than half of the nurses, occupational therapists and physiotherapists and nearly one half of the physicians desired a private employment for future work.

- Geriatrics was not preferred as an area for future work.

- Women did more of the unpaid household work and had more often the main responsibility for home and family compared to men.

- The satisfaction with work in general was high, but a majority was dissatisfied with management and organization at work. This dissatisfaction was related to the ability to pursue knowledge development in the professional field during working hours and the ability to work as independently as they wished.

- Occupational therapists and physiotherapists working in municipalities experienced low control at work compared with those working in county councils.

- In all four professions, more women than men experienced work related overcommitment.

- Among the respondents in all four professional groups, high scores on overcommitment, were associated with experiences of effort-reward imbalance.

- The dissatisfaction with work in general was associated with type of employer, reward and control among the occupational therapists and physiotherapists working in municipalities.

- An increase in dissatisfaction with work in general was seen among those nurses and physicians, working in county councils, who had high scores on effort, low scores on reward, experienced work related overcommitment and those who had imbalance between effort-reward at work compared with the other subjects.
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